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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,033	12/30/2003	Peter Muhlradt	29473/11899A	7597
4743	7590	09/14/2006	EXAMINER	
MARSHALL, GERSTEIN & BORUN LLP 233 S. WACKER DRIVE, SUITE 6300 SEARS TOWER CHICAGO, IL 60606			AUDET, MAURY A	
			ART UNIT	PAPER NUMBER
			1654	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

TH

Office Action Summary	Application No. 10/748,033	Applicant(s) MUHLRADT ET AL.	
	Examiner Maury Audet	Art Unit 1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>03/08/2004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION***Election/Restrictions***

Applicant's election of Group I, claims 1-12, as drawn to a lipopeptide/lipoprotein structure wherein loci Y is SEQ ID NOS: 3, 7, 8, or 10 (peptide species election being MALP-2 (e.g. stereochemically opposing SEQ ID NO: 8 or 10), wherein the species of the remainder of the lipopeptide/lipoprotein structure sidechain groups include: R1 is C15 alkyl; R2 is C15 alkyl; X is S; Z1 is H; Z2 is H; and W is Co (n is therefore not applicable)) in the reply filed on 06/21/2006, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-12 are examined on the merits as drawn to the elected invention (lipopeptide/lipoprotein structure wherein Y is only SEQ ID NOS: 3, 7, 8, or 10).

Claim Objections

Claims 1-12 are objected to because of the following informalities: The claims have not been amended to be drawn to the elected invention (e.g. a lipopeptide/lipoprotein structure wherein loci Y is SEQ ID NOS: 3, 7, 8, or 10). Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, as drawn to the elected species described at the outset, are rejected under 35 U.S.C. 103(a) as being unpatentable over Muhlradt et al. (J. Exp. Med., June 2, 1997, pp. 1951-1958) in view of WO 98/27110 (GESELLSHAFT FUR BIOTECHNOLOGISCHE FORSCHUNG MBH (GBF))) and Fidler et al. (US 4916118).

Muhlradt et al. teach the synthetic "S-[2,3-bisphosphatidyl-(2S)-propyl]cysteinyl-GNNDESNISFKEK" compound (p. 1955 Fig. 2B; Applicant's elected species structure SEQ ID NOS: 3 and 10); based on the native form isolated from a mycoplasma clone, specifically a Mycoplasma fermentans clone, which is water-soluble (abstract, introduction); having "highest specific MSA [macrophage stimulating activity] of so far described" (page 1952, sec. 2); which may be useable in such solutions as potent macrophage and B cell activators and vaccines, like other MSA compounds (page 1955, 2nd column, 1st para.). Muhlradt et al. also teach that a "wealth of information about which particular moieties of the lipopeptides are functionally important has been forthcoming from synthesis and assay of various analogues. Thus, the presence of both ester-bound fatty acids is a prerequisite for biological activity, whereas the amide-bound fatty acid was found to be dispensable" (p. 1955, last para.). Muhlradt et al. places no import as to the lipopeptide/lipoprotein structure * asymmetric carbon atom has the absolute configuration R when X = S (sulfur) [as opposed to (native??? assumed) absolute

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configuration S when X = S (sulfur) – see 35 USC section 112 2nd below also)) OR that either configuration bears any physiological impact on the compounds ability to function in stimulating immune system response to infection.

WO 98/27110 teach the native “S-(2,3-dihydroxypropyl)cysteine-GNNDESNISFKEK” compound isolated from a mycoplasma clone, specifically a Mycoplasma fermentans clone, which is water-soluble (abstract, page 3); as well as for an agent [i.e. for treatment] containing the afore-mentioned peptide [Applicant’s elected species structure, e.g. SEQ ID NOS: 3 and 10].

Fidler et al. teach the use of “2-palmitoyl derivatives . . . lipopeptides having immunomodulating properties” (column 7, lines 33-35, 39-4) in pharmaceuticals as macrophage stimulators (column 8, lines 37-41).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the lipopeptide/lipoprotein structure with the * asymmetric carbon atom in EITHER the absolute configuration NATIVE S or R when X = S (sulfur) in Muhlradt et al., because the reference advantageously teaches that a “wealth of information about *which particular moieties of the lipopeptides are functionally important* has been forthcoming from synthesis and assay of various analogues. Thus, the presence of both ester-bound fatty acids is a prerequisite for biological activity, whereas the amide-bound fatty acid was found to be dispensable” (p. 1955, last para.)”; with no mention (nor in Applicant’s present specification) that altering the * asymmetric carbon atom from it’s *native* absolute configuration S when X = S (sulfur), to R configuration; impacts any unexpected results in terms of the compounds ability to stimulate infection treating chemical pathways, based on routine reconfiguration of *native* absolute configuration S to R configuration when X = S (sulfur), absent evidence to the contrary.

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It also would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use pharmaceutical agents for infection treatment (e.g. wound treatment) incorporating 2-palmitoylthio derivatives and lipopeptides with the (elected MALP-2) structure S-[2,3-bispalmitoyloxy-(2R)-propyl]cysteinyl-GNNDESNISFKEK, in Muhlradt et al., because WO 98/27110 advantageously teach agents using native MALP-2 compounds for stimulating infection-treating pathways and because Fidler et al. advantageously teach that lipopeptides with 2-palmitoylthio derivatives, like that of Muhlradt and WO 98/27100, in a pharmaceutical composition exhibit macrophage stimulating activity which beneficially produces an immune system response in the recipient [i.e. against infection].

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 and 10-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 6-8, and 10-11 of copending Application No. 10/509,917 in view of Muhlrادت et al. (J. Exp. Med., June 2, 1997, pp. 1951-1958). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of '917 are drawn to any use of the same lipopeptide/lipoprotein wherein Y may be virtually any peptide, such as e.g. SEQ ID NO: 3.

The '917 patent was not expressly claimed for infection/wound treatment, but rather any use. Since the use is not expressly claimed, the use must be read in light of the specification of '917, which contemplates use of compounds such as SEQ ID NO: 3 for IgA stimulation which in turn stimulated protection of mucosal membranes from infection (e.g. which would include infections within wounds therein)(page 10, 2nd para.) Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to treat wounds using SEQ ID NO: 3 in the present invention, based on the advantageous teachings of '917 for use such compounds as SEQ ID NO: 3 for anti-infection stimulation of IgA.

Additionally, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the lipopeptide/lipoprotein structure with the * asymmetric carbon atom in EITHER the absolute configuration NATIVE S or R when X = S (sulfur) in '917 in view of Muhlrادت et al. (discussed above under 35 USC 103), because Muhlrادت et al.

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advantageously teaches that a “wealth of information about *which particular moieties of the lipopeptides are functionally important* has been forthcoming from synthesis and assay of various analogues. Thus, the presence of both ester-bound fatty acids is a prerequisite for biological activity, whereas the amide-bound fatty acid was found to be dispensable” (p. 1955, last para.)”; with no mention (nor in Applicant’s present specification) that altering the * asymmetric carbon atom from its *native* absolute configuration S when X = S (sulfur), to R configuration; impacts any unexpected results in terms of the compounds ability to stimulate infection treating chemical pathways, based on routine reconfiguration of *native* absolute configuration S to R configuration when X = S (sulfur), absent evidence to the contrary.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112 2nd

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12, as drawn to SEQ ID NOS: 3, 7, 8 or 10, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 requires that the lipopeptide/lipoprotein structure * asymmetric carbon atom to have the absolute configuration R when X = S (sulfur) (as opposed to abandoned parent application 09/716,778, which required * asymmetric carbon atom to have the (native??? assumed) absolute configuration S when X = S (sulfur)). According the sequence identifier information, only SEQ ID NO: 10 is clearly in the absolute configuration R when X is S. Whereas, SEQ ID NO: 10 is indefinite, since it appears to be in the absolute configuration S when X is S, contrary to the limitations set by claim 1. Additionally, SEQ ID NO: 7 is also indefinite, since it contemplates absolute configurations of both R and S when X is S. Finally, SEQ ID NO: 3 appears definite, like SEQ ID NO: 10 (which SEQ ID NO: 10 includes in it's entirety as part of the greater structure, as do SEQ ID NOS: 7 and 8) is simply the peptide itself, without the other required attributes/components of the structure, and is open ended in terms of attributes, allowing for absolute configuration R when X is S. Clarification or amendment is required, and if the above is correct based on the amendment of absolute configuration S to R, it is simply suggested that SEQ ID NOS: 7 and 8 be deleted from the claim language. While, other claim amendments are made to indicate e.g. wherein Y of the lipoprotein/lipopeptide structure of claim 1 is SEQ ID NO: 3 and wherein the lipopeptide/lipoprotein of claim 1 IS SEQ ID NO: 10.

Request for Information

Applicant is asked to provide the English translation of his PCT/EP97/07090 (WO 98/27110), cited in the Information Disclosure Statement of the present application and cited as art below.

The two primary references cited as prior art of record in the present application are both Applicant's works. Should Applicant respond with amendments deleting various sidechain group options for the lipopeptide/lipoprotein structure of claim 1, in an attempt to overcome the prior art of record, it is strongly suggested that Applicant clearly argue/describe 1) every structural limitation described in those references, and 2) why the remaining sidechain alternations (not in the reference(s)), for use the same/similar method of using nearly identical compounds provides some unobvious effect in this method or unexpected result; rising to the level of unobvious substitution.

Conclusion

No claims are allowed.

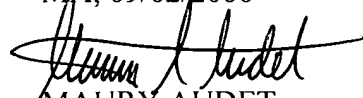
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maury Audet whose telephone number is 571-272-0960. The examiner can normally be reached on M-Th. 7AM-5:30PM (10 Hrs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecelia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MA, 09/02/2006


MAURY AUDET
PATENT EXAMINER
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